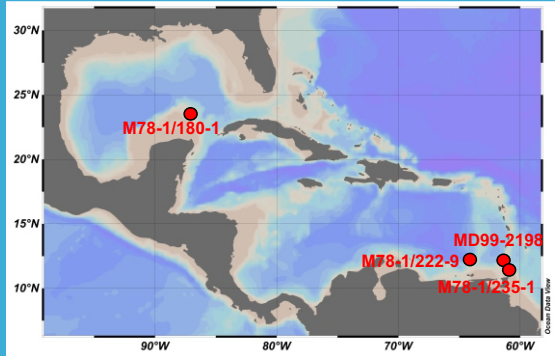
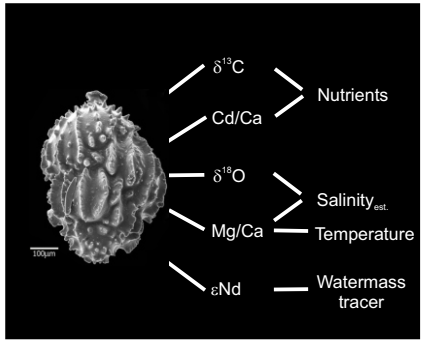
INTERMED: Role of intermediate water variability in the Caribbean and Gulf of Mexico in deglacial climate change.

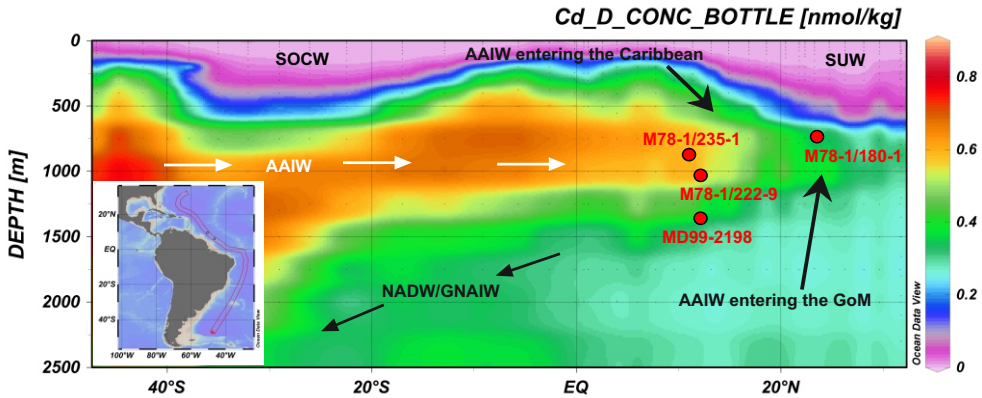
Principal Investigator:
David-Willem Poggemann (PhD-student)
Supervisors:
Dirk Nürnberg , Martin Frank , Ed Hathorne

Funding:
DFG (Cluster of Excellence „The Future Ocean“)

GEOMAR

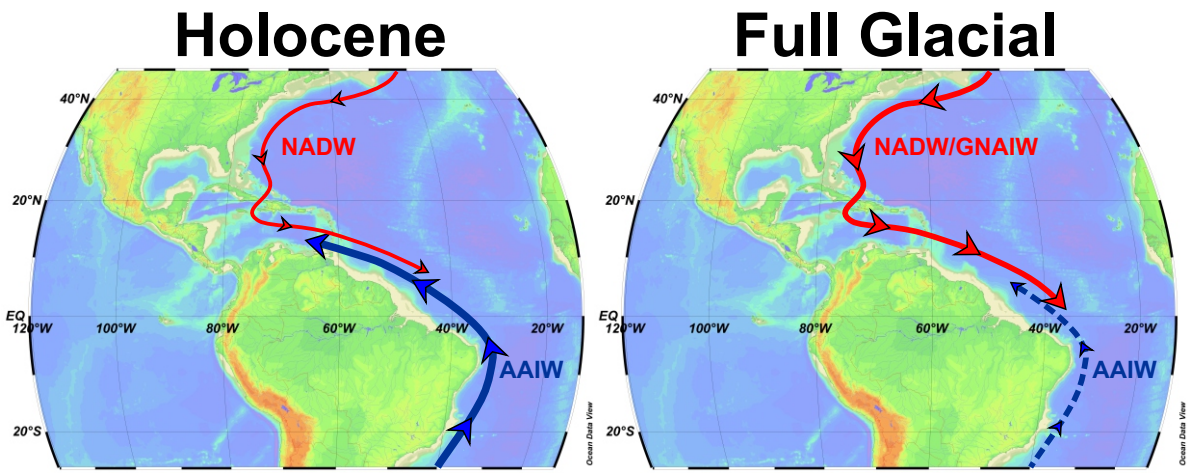






Top left: Map of the Caribbean and Gulf of Mexico indicating the core locations analysed in this study (red dots); Top right: Diagram illustrating the applied geochemical proxies on benthic foraminiferal tests, (image from *of Uvigerina spp. from foraminifera.eu)*; Bottom: S-N trending Cadmium-profile indicating core positions and depths they were retrieved from (red dots), different water masses characterized by different Cadmium-concentrations (Cd) (SOCW = Southern Ocean Central Water; SUW = Subtropical Underwater; AAIW = Antarctic Intermediate Water; NADW = North Atlantic Deepwater).

The oceanic thermohaline circulation transports heat from low to high latitudes and nutrients vice versa, redistributes salt and carbon and therefore, plays a keyrole in the global climate system. Today the Atlantic Meridional Overturning Circulation (AMOC) is driven by the formation of North Atlantic Deepwater (NADW) in the northern N-Atlantic. How AMOC varied in response to periods of abrupt climatic cooling during the last deglaciation, namely the Younger Dryas (YD) and Heinrich 1 event (H1) is the focus of this study. The approach is to analyse calcitic tests of benthic/planktonic foraminifera from various intermediate depth locations in order to improve our understanding of the intermediate water mass distribution and variability on millennial time-scales.



Possible evolution of intermediate water distribution from full glacial to Holocene.

future ocean
KIEL MARINE SCIENCES

HELMHOLTZ GEMEINSCHAFT

Grafik 2

Aenean commodo ligula eget dolor.
s dis parturient montes, nascetur ri-
e eu, pretium quis, sem. Nulla con-
aliquet nec, vulputate eget, arcu. In
Nullam dictum felis eu pede mollis
tum semper nisi. Aenean vulputate
vitae, eleifend ac, enim. Aliquam lo-
sellus viverra nulla ut metus varius
s nisi vel augue. Curabitur ullamcor -
s tempus, tellus eget condimentum